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## CHECKLIST OF MONTANA BUTTERFLIES (RHOPALOCERA)

STEVE KOHLER

Montana Department of Natural Resources and Conservation, Forestry Division, 2705  
Spurgin Road, Missoula, Montana 59801

**ABSTRACT.** A list of 177 species of butterflies (Rhopalocera) known to occur in Montana and the county where each specimen has been collected is compiled from records gleaned from university collections, resident collectors, published literature, non-resident collectors, some major natural history museums, and the author's collection.

This checklist has two basic purposes. The first is to present the latest information available on the species of butterflies occurring in Montana and to give their distributions. The second is to serve as a basis for soliciting additional records from non-resident collectors for inclusion in a larger work on Montana's butterflies, which is currently in preparation. This work will include photographs of all species, detailed distribution maps, collection records, life histories and food-plant information. Anyone who can add additional county records for any species is urged to contact me.

Seventy-three years have passed since the first and only attempt at a comprehensive treatment on Montana butterflies was published by M. J. Elrod in 1906, "The Butterflies of Montana," a 174-page illustrated bulletin. An abridged version of this is Elrod and Masters (1970). Early but restricted treatments are those of W. H. Edwards (1872, 1878, 1882b, 1883), Scudder (1875), and Wiley (1894). Papers treating only a species or group of species are Coolidge (1906, 1909), Clench (1944), Daly (1964), W. H. Edwards (1882a, 1886, 1890, 1894), Field (1936a, 1936b, 1938), McDunnough (1928, 1929), Shepard (1964), Skinner (1893, 1921), Stallings and Turner (1947), and Wright (1922). A manuscript checklist of Montana butterflies was prepared in 1941 by Thomas Rogers (Spokane, Washington) but was never published.

Elrod's "Butterflies of Montana," though an excellent treatment for its time, is now out-of-date. The nomenclature is antiquated, and the coverage mainly limited to a few counties where collections had been made at that time (Missoula, Flathead, Gallatin, Park, Custer, Lewis & Clark counties). There are also some errors in identification. Copies of the publication are almost impossible to obtain.

Thomas Rogers' manuscript checklist is also restricted in its coverage, listing mainly records from the northwestern part of the state and repeating many of the Elrod records. The nomenclature used is also out-of-date, and, since it was never published, the list has been available to only a very few people.

Montana is a large state; approximately 540 miles in length, with an average width of 275 miles. It is endowed with great variety of habitat and terrain as well as climate. The highest point is Granite Peak (12,799 ft.) in the Beartooth Range, Park Co. The lowest, 1,820 ft., is where Highway 2 crosses the Montana-Idaho border northwest of Troy in Lincoln Co. The western two-fifths of Montana are mountainous; the main Rocky Mountain chain runs north-south across the state. This western mountainous region has received the most attention in the past. The eastern three-fifths of the state are high, rolling prairie country, interrupted by several small mountain ranges. This region has been collected sporadically, and some counties do not have a single species recorded.

Data for county records were obtained from:

(1) The Elrod collection, University of Montana, Missoula. This also includes a collection made by G. E. Barnes in southern Park Co. and the C. A. Wiley collection from Miles City, Custer Co.

(2) The Montana State University collection, Bozeman. Early work on this collection was done by R. A. Cooley, R. E. Hutchins, E. Koch, and A. D. Hastings. The large collection of C. C. Albright, Great Falls, also came to Montana State University at his death, and another small collection by J. J. McDonald of Helena was donated at his death. Albright, a Great Falls physician, collected extensively in the Little Belt Mountains around Monarch, Cascade Co., where he had a summer home. McDonald collected in the vicinity of Helena and the Big Belt Mountains.

(3) The collection of Glacier National Park at park headquarters, West Glacier, which contains eight drawers of butterflies, mainly collected by J. S. Garth in the 1930's.

(4) Private collections of J. E. Crystal, Plains; F. E. Holley, Hamilton; J. Goosey, Jr., Big Timber; and my extensive collection.

(5) A review of the published literature.

(6) Montana collection records provided by non-resident collectors.

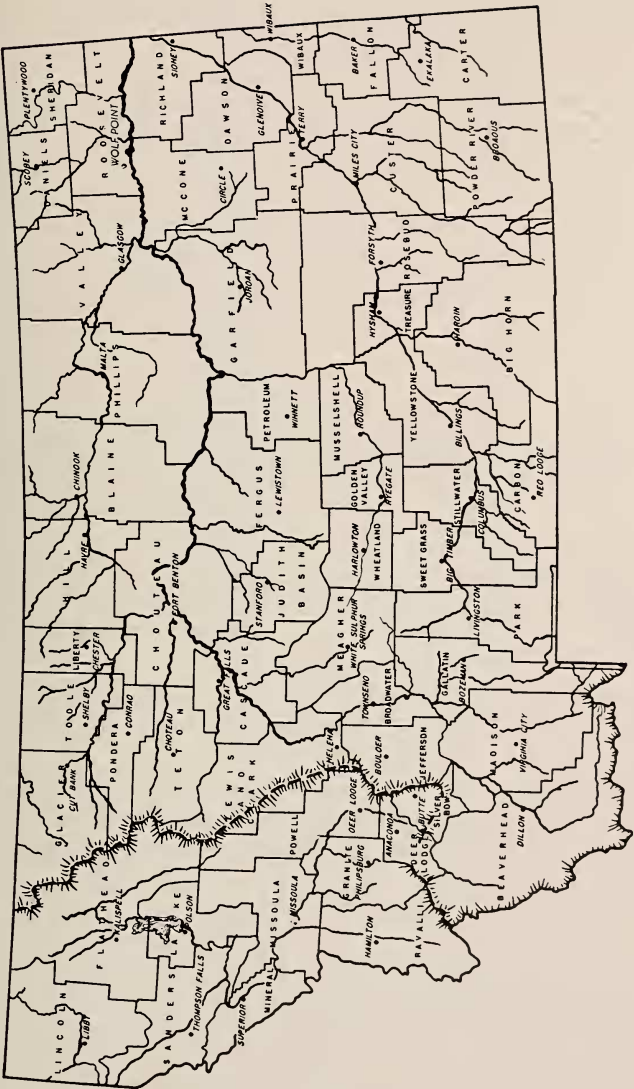


FIG. 1. Map of Montana showing county boundaries.

TABLE 1. Number of Montana butterfly species recorded by county.

|               |     |              |    |
|---------------|-----|--------------|----|
| Carbon        | 128 | Dawson       | 29 |
| Gallatin      | 115 | Yellowstone  | 28 |
| Flathead      | 113 | Big Horn     | 27 |
| Missoula      | 113 | Blaine       | 27 |
| Sweet Grass   | 102 | Deer Lodge   | 23 |
| Cascade       | 96  | Musselshell  | 22 |
| Lake          | 96  | Prairie      | 19 |
| Lewis & Clark | 95  | Rosebud      | 17 |
| Madison       | 95  | Fallon       | 15 |
| Ravalli       | 87  | Hill         | 13 |
| Sanders       | 83  | Teton        | 8  |
| Glacier       | 78  | Toole        | 8  |
| Beaverhead    | 77  | Powder River | 7  |
| Granite       | 71  | Richland     | 7  |
| Powell        | 71  | Wibaux       | 7  |
| Fergus        | 69  | Valley       | 5  |
| Mineral       | 67  | Liberty      | 4  |
| Custer        | 66  | Pondera      | 4  |
| Stillwater    | 66  | Wheatland    | 4  |
| Chouteau      | 63  | Phillips     | 2  |
| Lincoln       | 61  | Roosevelt    | 2  |
| Jefferson     | 60  | Garfield     | 1  |
| Park          | 60  | Petroleum    | 1  |
| Meagher       | 49  | Sheridan     | 1  |
| Judith Basin  | 36  | Treasure     | 1  |
| Broadwater    | 35  | Carter       | 0  |
| Silver Bow    | 35  | Daniels      | 0  |
| Golden Valley | 33  | McCone       | 0  |

(7) Information obtained from the major natural history museums. Unfortunately, there is considerable material in some of these museums that I have not yet examined. It is hoped that this task will be accomplished before the larger work is published. Museums that have collections containing substantial amounts of Montana material are: Allyn Museum of Entomology, Sarasota; American Museum of Natural History, New York; California Academy of Sciences, San Francisco; Canadian National Collection, Ottawa; Carnegie Museum, Pittsburgh; Los Angeles County Museum of Natural History, Los Angeles; Museum of Comparative Zoology, Harvard University, Cambridge; National Museum of Natural History, Washington, D. C.; Peabody Museum of Natural History, Yale University, New Haven; Texas Memorial Museum, Austin. I would certainly appreciate hearing from curators of collections in other institutions if they have Montana material.

Notes on several species are given in the checklist, especially if the nomenclature of the species is in question. Location of counties is



shown on the Montana map in Fig. 1. Table 1 shows the number of butterfly species recorded in each county.

## COUNTY RECORDS OF MONTANA BUTTERFLIES

### Megathymidae

*Megathymus* Scudder, 1872

- 1 *streckeri leussleri* Holland—Custer, Rosebud.

### Hesperiidae

*Amblyscirtes* Scudder, 1872

- 2 *vialis* (W. H. Edwards)—Carbon, Flathead, Lake, Lincoln, Mineral, Missoula.

*Euphyes* Scudder, 1872

- 3 *vestris metacomet* (Harris)—Sweet Grass.

*Ochlodes* Scudder, 1872

- 4a *sylvanoides sylvanoides* (Boisduval)—Flathead, Granite, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Ravalli, Sanders.
- 4b *sylvanoides napa* (W. H. Edwards)—Broadwater, Carbon, Cascade, Chouteau, Gallatin, Golden Valley, Musselshell, Stillwater, Sweet Grass, Toole, Yellowstone.

*Atrytone* Scudder, 1872

- 5 *logan lagus* (W. H. Edwards)—Cascade, Custer, Powder River. The American Museum of Natural History has specimens labeled only "Montana" (Stanford, 1975).

*Atalopedes* Scudder, 1872

- 6 *campestris* (Boisduval)—Specimens are in the American Museum of Natural History which are labeled only "Montana" (Stanford, 1975).

*Polites* Scudder, 1872

- 7 *peckius* (Kirby)—Carbon, Gallatin, Lincoln, Missoula, Petroleum.
- 8 *sabuleti sabuleti* (Boisduval)—The American Museum of Natural History has two specimens labeled only "Montana" (Stanford, 1975).
- 9 *draco* (W. H. Edwards)—Beaverhead, Broadwater, Carbon, Chouteau, Fergus, Flathead, Gallatin, Glacier, Madison, Powell, Stillwater, Sweet Grass.
- 10 *themistocles* (Latreille)—Carbon, Cascade, Custer, Flathead, Gallatin, Lewis & Clark, Madison, Sweet Grass.
- 11 *origenes rhena* (W. H. Edwards)—Gallatin, Madison.
- 12 *mystic* ssp.—Carbon, Cascade, Chouteau, Gallatin, Lincoln, Mineral, Missoula, Stillwater, Sweet Grass. MacNeil (in Howe, 1975) feels that Montana, Idaho, Washington, and British Columbia *mystic* may represent an unnamed subspecies.
- 13 *sonora utahensis* (Skinner)—Carbon, Gallatin. There is a specimen from Lake View, Montana (no county given) in the U.S. National Museum, as well as additional specimens labeled only "Montana" (Stanford, 1975).

*Hesperia* Fabricius, 1793

- 14 *uncas uncas* W. H. Edwards—Beaverhead, Cascade, Chouteau, Fallon, Flathead, Gallatin, Golden Valley, Hill, Lake, Madison, Missoula, Toole.

- 15a *comma assiniboia* (Lyman)—Dawson.  
 15b *comma manitoba* (Scudder)—Carbon, Flathead, Lake, Lewis & Clark, Missoula, Park, Powell, Sweet Grass, Toole.  
 15c *comma harpalus* (W. H. Edwards)—Beaverhead, Broadwater, Carbon, Cascade, Chouteau, Gallatin, Golden Valley, Madison, Meagher, Missoula, Musselshell, Park, Ravalli, Stillwater, Sweet Grass, Yellowstone.  
 15d *comma oregonia* (W. H. Edwards)—Sanders.  
 15e *comma oregonia/harpalus*—Flathead, Glacier, Lake, Lincoln, Mineral. Specimens of *comma* from the northwestern part of the state appear to be blends of *oregonia* and *harpalus*.  
 16 *nevada* (Scudder)—Beaverhead, Carbon, Fergus, Gallatin, Glacier, Golden Valley, Jefferson, Lake, Lewis & Clark, Missoula, Musselshell, Ravalli, Sweet Grass, Yellowstone.  
 17 *pahaska pahaska* Leussler—Carbon, Cascade, Golden Valley, Yellowstone.  
 18 *juba* (Scudder)—Gallatin, Lake, Madison, Yellowstone.  
 19 *leonardus pawnee* Dodge—Big Horn, Chouteau, Custer, Dawson, Prairie. There are additional specimens collected by Dodge and Neumogen in the U.S. National Museum labeled only "Montana" (Stanford, 1975).  
 20 *ottoe* W. H. Edwards—Custer, Prairie. Additional specimens labeled only "Montana" are in the U.S. National Museum and the American Museum of Natural History (Stanford, 1975).

*Oarisma* Scudder, 1872

- 21 *garita garita* (Reakirt)—Carbon, Cascade, Chouteau, Custer, Flathead, Gallatin, Glacier, Golden Valley, Granite, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Powell, Ravalli, Richland, Sanders, Sweet Grass.

*Carterocephalus* Lederer, 1852

- 22 *palaemon mandan* (W. H. Edwards)—Beaverhead, Carbon, Cascade, Flathead, Gallatin, Glacier, Lake, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Sanders, Sweet Grass.

*Pholisora* Scudder, 1872

- 23 *catullus* (Fabricius)—Carbon, Cascade, Chouteau, Custer, Dawson, Gallatin, Lewis & Clark, Missoula, Ravalli, Sanders, Sweet Grass, Yellowstone.

*Hesperopsis* Dyar, 1905

- 24 *libya lena* (W. H. Edwards)—Custer, Dawson. Additional specimens labeled only "Montana" are in the collections of the U.S. National Museum, American Museum of Natural History and the Brooklyn Museum (Stanford, 1975; Field, 1976).

*Pyrgus* Hübner, 1816

- 25 *centaureae loki* Evans—Carbon, Flathead, Glacier, Lake, Lewis & Clark, Park.  
 26 *ruralis* (Boisduval)—Beaverhead, Carbon, Cascade, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Lake, Lewis & Clark, Lincoln, Madison, Missoula, Park, Ravalli, Sweet Grass.  
 27 *communis communis* (Grote)—Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Dawson, Deer Lodge, Fallon, Flathead, Gallatin, Golden Valley, Jefferson, Lake, Lewis & Clark, Madison, Mineral, Missoula, Musselshell, Park, Prairie, Richland, Sanders.

*Erynnis* Schrank, 1801

- 28 *icelus* (Scudder & Burgess)—Carbon, Fergus, Flathead, Gallatin, Glacier, Jefferson, Lincoln, Madison, Mineral, Missoula, Ravalli, Roosevelt, Sanders, Sweet Grass.  
 29 *persius fredericki* H. A. Freeman—Beaverhead, Cascade, Chouteau, Fergus, Gal-

latin, Granite, Lake, Lewis & Clark, Meagher, Mineral, Missoula, Powell, Ravalli, Sanders, Silver Bow, Sweet Grass.

- 30 *afranius* (Lintner)—Beaverhead, Cascade, Fergus, Flathead, Gallatin, Glacier, Judith Basin, Lake, Lewis & Clark, Madison, Meagher, Missoula, Powell.

- 31 *pacuvius lilium* (Dyar)—Flathead, Gallatin, Lake, Sanders, Yellowstone.

*Thorybes* Scudder, 1872

- 32 *pylades pylades* (Scudder)—Cascade, Chouteau, Custer, Flathead, Gallatin, Jefferson, Lincoln, Sweet Grass, Yellowstone.

*Epargyreus* Hübner, 1816

- 33 *clarus clarus* (Cramer)—Big Horn, Carbon, Cascade, Chouteau, Custer, Flathead, Gallatin, Lake, Lewis & Clark, Lincoln, Missoula, Sanders, Sweet Grass.

## Papilionidae

*Parnassius* Latreille, 1804

- 34 *clodius gallatinus* Stichel—Flathead, Gallatin, Glacier, Madison, Mineral, Missoula, Park, Ravalli. References to *altaurus* Dyar in Montana represent *gallatinus*. Ferris (1976b) restricts the range of *altaurus* to Blaine and Custer counties, Idaho.

- 35a *phoebus smintheus* Doubleday—Glacier. Ferris (1976a) treated *xanthus* Ehrmann and *idahoensis* Bryk & Eisner, both of which have been referred to Montana, as synonyms of *smintheus*.

- 35b *phoebus montanulus* Bryk & Eisner—Beaverhead, Carbon, Cascade, Chouteau, Fergus, Flathead, Gallatin, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Stillwater, Sweet Grass, Teton. Ferris (1976a) has treated *maximus* Bryk & Eisner as a synonym of *montanulus*. His arrangement for both *smintheus* and *montanulus* seems logical and is followed here, although *maximus* (TL Judith Mountains, Fergus Co.), because of the large size and melanic appearance of the females, may be distinct enough to be considered a separate subspecies.

*Papilio* Linnaeus, 1758

- 36 *polyxenes asterius* Stoll—Sweet Grass. One specimen, a female, is in the collection of John Goosey, Jr., Big Timber.

- 37 *bairdii* f. "brucei" W. H. Edwards—Carbon, Cascade, Custer, Gallatin, Lewis & Clark, Madison, Musselshell, Prairie. The taxonomic status of *bairdii* W. H. Edwards, "brucei," and *oregonius* W. H. Edwards is still not completely resolved. Emmel's arrangement in Howe (1975) is followed.

- 38 *oregonius* W. H. Edwards—Lake, Missoula, Sanders.

- 39a *zelicaon nitra* W. H. Edwards—Cascade, Fergus, Glacier, Golden Valley, Granite, Meagher, Missoula, Powell, Sanders. Fisher's (1977) paper outlining his breeding experiments has clarified the relationship of *nitra*, *zelicaon* Lucas and "gothica" Remington. His proposed arrangement is followed here.

- 39b *zelicaon nitra* f. norm. "gothica"—Beaverhead, Carbon, Cascade, Chouteau, Custer, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Golden Valley, Granite, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Sweet Grass. This is the much more abundant, yellow "normal form" of *nitra*.

- 40 *indra indra* Reakirt—Carbon, Gallatin, Lewis & Clark.

- 41 *glaucus canadensis* Rothschild & Jordan—Carbon, Cascade, Custer, Flathead, Glacier, Judith Basin, Lincoln, Sanders. Elrod (1906) reports several specimens in Wiley's Miles City collection. Since Elrod outlines the differences between *glaucus* and *rutulus* Lucas in his discussion, I feel that these specimens were in

fact *glaucus* and not *rutulus*. The specimens could not be located in the remnants of the Elrod collection.

- 42 *rutulus rutulus* Lucas—Beaverhead, Big Horn, Carbon, Deer Lodge, Flathead, Gallatin, Glacier, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Park, Powell, Sanders, Sweet Grass.
- 43 *multicaudatus* Kirby—Beaverhead, Cascade, Flathead, Gallatin, Jefferson, Lake, Lewis & Clark, Madison, Mineral, Missoula, Pondera, Powell, Ravalli, Rosebud, Sanders, Sweet Grass.
- 44 *eurymedon* Lucas—Big Horn, Carbon, Cascade, Custer, Flathead, Gallatin, Granite, Jefferson, Lake, Lewis & Clark, Madison, Mineral, Missoula, Powell, Ravalli, Sanders, Sweet Grass.

## Pieridae

*Neophasia* Behr, 1869

- 45a *menapia menapia* (Felder & Felder)—Carbon, Fergus.
- 45b *menapia* nr. *tau* (Scudder)—Broadwater, Flathead, Granite, Jefferson, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, Sanders, Silver Bow.

*Pieris* Schrank, 1801

- 46 *beckerii* W. H. Edwards—Beaverhead, Broadwater, Carbon, Flathead, Gallatin, Granite, Jefferson, Lake, Lewis & Clark, Madison, Mineral, Missoula, Park, Sanders, Sweet Grass, Wheatland.
- 47 *sisymbrii elivata* (Barnes & Benjamin)—Beaverhead, Flathead, Gallatin, Granite, Jefferson, Lake, Madison, Missoula, Powell, Ravalli, Sanders.
- 48 *protodice* Boisduval & LeConte—Beaverhead, Carbon, Cascade, Chouteau, Custer, Deer Lodge, Flathead, Gallatin, Golden Valley, Granite, Lake, Lewis & Clark, Madison, Missoula, Park, Yellowstone. Shapiro's (1976) arrangement of the *protodice-occidentalis* group is followed.
- 49 *occidentalis occidentalis* Reakirt—Beaverhead, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Dawson, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Ravalli, Sanders, Stillwater, Sweet Grass, Teton, Yellowstone.
- 50 *napi macdunnoughii* Remington—Beaverhead, Big Horn, Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Stillwater, Sweet Grass.
- 51 *rapae* (Linnaeus)—Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Flathead, Gallatin, Granite, Lake, Lewis & Clark, Madison, Meagher, Mineral, Missoula, Park, Ravalli, Sanders, Stillwater, Sweet Grass, Yellowstone.

*Colias* Fabricius, 1807

- 52a *meadii meadii* W. H. Edwards—Carbon, Gallatin, Madison, Park, Stillwater, Sweet Grass.
- 52b *meadii elis* Strecker—Flathead, Glacier.
- 53 *eurytheme* Boisduval—Cascade, Custer, Flathead, Gallatin, Glacier, Granite, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Musselshell, Ravalli, Sanders, Sweet Grass.
- 54 *philodice philodice* Godart—Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Musselshell, Park, Pondera, Powder River, Powell, Ravalli, Rosebud, Sanders, Silver Bow, Still-

water, Sweet Grass, Teton, Valley, Wibaux, Yellowstone. Included here is *eriphyle* W. H. Edwards.

- 55 *interior interior* Scudder—Flathead, Gallatin, Granite, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Ravalli, Sanders.
- 56 *gigantea harroweri* Klots—Gallatin.
- 57a *alexandra columbiensis* Ferris—Flathead, Lake, Lincoln, Mineral, Missoula, Ravalli, Sanders. Many specimens show characters associated with both *columbiensis* and *astraea* W. H. Edwards (Ferris, 1973).
- 57b *alexandra astraea* W. H. Edwards—Beaverhead, Carbon, Cascade, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Jefferson, Lake, Lewis & Clark, Madison, Meagher, Park, Powell, Ravalli, Silver Bow, Stillwater, Sweet Grass, Toole. Male specimens grouped here under *astraea* show a great deal of variation and are mixed orange to yellow populations. Females are white.
- 58 *pelidne skinneri* Barnes—Beaverhead, Carbon, Cascade, Gallatin, Glacier, Granite, Jefferson, Lewis & Clark, Meagher, Missoula, Powell, Ravalli, Stillwater, Sweet Grass.
- 59 *nastes streckeri* Grun-Grshmaïlo—Flathead, Glacier.

*Phoebis* Hübner, 1816

- 60 *sennae eubule* (Linnaeus)—Carbon.

*Nathalis* Boisduval, 1836

- 61 *iole* Boisduval—Missoula, Stillwater. There is no breeding population of *iole* in Montana. The captures surely are migrants.

*Anthocharis* Boisduval, Rambur & Graslin, 1833

- 62 *sara julia* W. H. Edwards—Beaverhead, Broadwater, Carbon, Cascade, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Lake, Lewis & Clark, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass.

*Euchloe* Hübner, 1816

- 63 *ausonides coloradensis* (H. Edwards)—Beaverhead, Big Horn, Carbon, Cascade, Chouteau, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Silver Bow, Sweet Grass. Some authors consider *coloradensis* a synonym of *ausonides* Lucas (Howe, 1975). California and western mountain populations differ from Rocky Mountain populations in the appearance of the females. The name *coloradensis* is used here for Montana specimens, and *ausonides* is restricted to the more western populations.
- 64 *olympia* f. "rosa" (W. H. Edwards)—Cascade, Custer, Fallon, Fergus, Gallatin, Golden Valley, Hill, Musselshell, Park, Prairie, Sweet Grass. "rosa" is best considered a form rather than a subspecies.
- 65 *hyantis hyantis* (W. H. Edwards)—Broadwater, Granite, Jefferson, Madison, Ravalli, Sanders.

Riodinidae

*Apodemia* Felder & Felder, 1865

- 66 *mormo mormo* (Felder & Felder)—Prairie, Valley.

Lycaenidae

*Harkenclenus* dos Passos, 1970

- 67a *titus titus* (Fabricius)—Dawson.



- 67b *titus immaculosus* (Comstock)—Carbon, Cascade, Chouteau, Fergus, Flathead, Glacier, Lewis & Clark, Madison, Mineral, Missoula, Ravalli, Stillwater, Sweet Grass.

*Satyrium* Scudder, 1876

- 68 *fuliginosum semiluna* Klots—Big Horn, Carbon, Gallatin, Meagher, Sweet Grass, Wheatland.
- 69 *saepium okanagana* (McDunnough)—Carbon, Cascade, Flathead, Jefferson, Lake, Mineral, Missoula, Ravalli, Sanders, Stillwater.
- 70 *liparops aliparops* (Michener & dos Passos)—Dawson, Prairie, Stillwater, Sweet Grass.
- 71 *sylvinus* ssp.—Carbon, Cascade, Flathead, Jefferson, Lake, Madison, Mineral, Missoula, Ravalli, Sanders. *S. californica* (W. H. Edwards) has been reported from Montana on several occasions. I have not been able to examine all the specimens, but those I have seen appear to be *sylvinus*. For the present, all records for *californica* have been included here. There are no native *Quercus* (oak) in Montana, which is the reported larval food of *californica*, while *Salix* (willow), the food of *sylvinus* is widely distributed.
- 72 *acadica montanensis* (Watson & Comstock)—Carbon, Custer, Sweet Grass.

*Callophrys* Billberg, 1820

- 73 *polios obscurus* Ferris & Fisher—Carbon, Cascade, Custer, Fergus, Flathead, Golden Valley, Granite, Lake, Lewis & Clark, Mineral, Missoula, Ravalli, Sanders, Silver Bow.
- 74 *moisii schryveri* (Cross)—Granite, Lake, Mineral, Missoula, Ravalli, Sanders, Silver Bow.
- 75 *augustinus iroides* (Boisduval)—Carbon, Fergus, Flathead, Gallatin, Granite, Lake, Lewis & Clark, Mineral, Missoula, Park, Powell, Ravalli, Sanders.
- 76 *eryphon eryphon* (Boisduval)—Beaverhead, Carbon, Cascade, Custer, Fergus, Flathead, Gallatin, Glacier, Granite, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass. Elrod (1906) made reference to two records (Miles City, Custer Co. and Bozeman, Gallatin Co.) for *niphon* (Hübner). These records are considered doubtful, and the specimens could not be located. For the present, *niphon* should not be considered as occurring in Montana.
- 77 *spinetorum* (Hewitson)—Beaverhead, Carbon, Cascade, Fergus, Flathead, Gallatin, Glacier, Granite, Judith Basin, Lake, Lewis & Clark, Lincoln, Missoula, Powell, Ravalli, Sanders.
- 78 *siva siva* (W. H. Edwards)—Big Horn, Broadwater, Cascade, Custer, Dawson, Deer Lodge, Fallon, Gallatin, Granite, Jefferson, Lake, Lewis & Clark, Madison, Missoula, Park, Powell, Rosebud, Sanders, Silver Bow, Stillwater, Sweet Grass, Yellowstone.
- 79 *hyruei* Johnson—Ravalli, Sanders. Johnson (1976) has split the *nelsoni* (Boisduval) complex into four different species. Montana specimens from near Noxon, Sanders Co., were taken closest geographically to the range he outlines for *hyruei*, though he studied no Montana specimens. Johnson's study was based on relatively few specimens. It remains to be seen if his is the best approach to the *nelsoni* complex, but his treatment will be followed for the present. Montana specimens may also represent his *rosneri*, though too few are available to place them accurately.
- 80 *affinis affinis* (W. H. Edwards)—Carbon, Fergus, Gallatin, Lewis & Clark, Madison, Missoula, Sweet Grass.
- 81 *sheridanii* nr. *neoperplexa* (Barnes & Benjamin)—Beaverhead, Big Horn, Carbon, Gallatin, Granite, Jefferson, Madison, Powell, Ravalli, Sanders, Silver Bow. Specimens are intermediate between *neoperplexa* and *sheridanii* (W. H. Edwards), but appear to be closer to *neoperplexa*.



*Strymon* Hübner, 1818

- 82 *melinus setonia* McDunnough—Big Horn, Carbon, Custer, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Jefferson, Lake, Lewis & Clark, Mineral, Missoula, Ravalli, Rosebud, Sanders, Silver Bow, Stillwater, Sweet Grass, Yellowstone.

*Lycaena* Fabricius, 1807

- 83a *phlaeas americana* Harris—Custer. This subspecies is included on the basis of specimens from Miles City reported by Wiley (Elrod, 1906). These specimens could not be located.
- 83b *phlaeas arethusa* (Wolley-Dod)—Flathead, Glacier.
- 83c *phlaeas arctodon* Ferris—Carbon, Judith Basin, Sweet Grass.
- 84 *cupreus snowi* (W. H. Edwards)—Beaverhead, Carbon, Cascade, Fergus, Flathead, Gallatin, Glacier, Lake, Madison, Park, Sweet Grass. Miller and Brown (1979) retain only *phlaeas* and *cupreus* in *Lycaena*. The other species formerly listed in *Lycaena* have been placed by them in the genera which follow. Their entire arrangement is used here.

*Gaeides* Scudder, 1876

- 85 *xanthoides dione* (Scudder)—Carbon, Cascade, Chouteau, Custer, Dawson, Glacier, Lewis & Clark, Prairie, Stillwater, Sweet Grass.
- 86 *editha montana* (Field)—Beaverhead, Broadwater, Carbon, Cascade, Chouteau, Flathead, Gallatin, Granite, Jefferson, Lake, Lewis & Clark, Madison, Mineral, Missoula, Ravalli, Stillwater, Sweet Grass.

*Hylolycaena* L. Miller & F. M. Brown, 1979

- 87 *hyllus* (Cramer)—Garfield, Prairie. This species was previously known as *thoe* Guérin-Méneville until Brown and Field (1970) showed the correct name as *hyllus*.

*Chalceria* Scudder, 1876

- 88a *rubidus sirius* (W. H. Edwards)—Blaine, Cascade, Custer, Flathead, Hill, Lake, Liberty, Powder River.
- 88b *rubidus duofacies* (Johnson & Balogh)—Beaverhead, Carbon, Gallatin, Lewis & Clark, Madison, Park, Powell, Silver Bow, Sweet Grass. This subspecies was only recently described (Johnson & Balogh, 1977).
- 89 *heteronea klotsi* (Field)—Beaverhead, Broadwater, Carbon, Cascade, Flathead, Gallatin, Glacier, Lake, Lewis & Clark, Madison, Missoula, Powell, Ravalli, Silver Bow, Stillwater, Sweet Grass.

*Epidemia* Scudder, 1876

- 90 *helooides* (Boisduval)—Beaverhead, Carbon, Cascade, Chouteau, Custer, Flathead, Gallatin, Jefferson, Judith Basin, Lake, Lewis & Clark, Liberty, Madison, Meagher, Missoula, Park, Prairie, Sanders, Stillwater, Sweet Grass, Toole. Ferris (1977) has clarified the relationship of *helooides* and *dorcas* (Kirby).
- 91 *dorcas florus* (W. H. Edwards)—Beaverhead, Broadwater, Carbon, Cascade, Chouteau, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Lake, Lewis & Clark, Madison, Meagher, Missoula, Park, Ravalli, Sanders, Stillwater, Sweet Grass.
- 92 *mariposa penroseae* (Field)—Carbon, Cascade, Flathead, Gallatin, Glacier, Granite, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Powell, Ravalli, Sanders, Stillwater.
- 93 *nivalis browni* (dos Passos)—Beaverhead, Carbon, Flathead, Glacier, Mineral, Missoula, Ravalli.

*Lycaeides* Hübner, 1816

- 94a *argyrognomon atrapraetextus* (Field)—Beaverhead, Cascade, Deer Lodge, Flat-

head, Glacier, Granite, Lake, Lincoln, Mineral, Missoula, Powell, Ravalli, Sanders.

- 94b *argyrognomon longinus* Nabokov—Carbon, Gallatin, Jefferson, Stillwater.  
 95 *melissa melissa* (W. H. Edwards)—Beaverhead, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Madison, Meagher, Missoula, Musselshell, Park, Powell, Prairie, Ravalli, Richland, Sheridan, Stillwater, Sweet Grass, Teton, Wibaux, Yellowstone.

*Plebejus* Kluk, 1802

- 96 *saepiolus saepiolus* (Boisduval)—Beaverhead, Big Horn, Broadwater, Carbon, Cascade, Chouteau, Custer, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Glacier, Judith Basin, Lake, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Richland, Sanders, Silver Bow, Stillwater, Sweet Grass, Wibaux.  
 97a *icarioides lycea* (W. H. Edwards)—Beaverhead, Big Horn, Broadwater, Carbon, Cascade, Chouteau, Custer, Deer Lodge, Fallon, Fergus, Gallatin, Jefferson, Madison, Meagher, Park, Silver Bow, Stillwater, Sweet Grass, Yellowstone.  
 97b *icarioides pimbina* (W. H. Edwards)—Beaverhead, Big Horn, Fallon, Flathead, Glacier, Granite, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, Sanders.  
 98 *shasta minnehaha* (Scudder)—Carbon, Fergus, Meagher, Richland, Sweet Grass.  
 99 *acmon lutzi* dos Passos—Carbon, Deer Lodge, Gallatin, Golden Valley, Lewis & Clark, Lincoln, Madison, Missoula, Park, Ravalli, Sanders, Stillwater, Sweet Grass.  
 100a *glandon megalis* McDunnough—Blaine, Cascade, Chouteau, Fergus, Flathead, Glacier, Granite, Judith Basin, Lewis & Clark, Lincoln, Missoula, Powell.  
 100b *glandon rustica* (W. H. Edwards)—Beaverhead, Carbon, Deer Lodge, Gallatin, Madison, Park, Stillwater, Sweet Grass.

*Everes* Hübner, 1816

- 101 *amyntula albrighti* Clench—Blaine, Broadwater, Carbon, Cascade, Chouteau, Fergus, Flathead, Gallatin, Glacier, Jefferson, Lake, Lincoln, Madison, Missoula, Park, Pondera, Powell, Ravalli, Sanders, Sweet Grass, Teton.

*Euphilotes* Mattoni, 1977

- 102 *battoides glaucon* (W. H. Edwards)—Madison, Missoula, Ravalli. Shields (1975) discusses placing *battoides* and *eoptes* (Boisduval) in *Pseudophilotes* Beuret, an arrangement followed by several authors including Brown (1972), but retains them in *Shijimiaeoides* Beuret. Mattoni (1977) more recently erected a new genus, *Euphilotes*.  
 103 *eoptes ancilla* (Barnes & McDunnough)—Carbon, Gallatin, Madison, Missoula, Ravalli, Sweet Grass.

*Glaucopsyche* Scudder, 1872

- 104 *lygdamus oro* Scudder—Beaverhead, Big Horn, Broadwater, Carbon, Custer, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Musselshell, Park, Powell, Ravalli, Rosebud, Sanders, Silver Bow, Stillwater, Sweet Grass, Wibaux, Yellowstone. There is blending with *columbia* Skinner in the northwestern counties.  
 105 *piasus daunia* W. H. Edwards—Beaverhead, Big Horn, Carbon, Cascade, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Granite, Lewis & Clark, Lincoln, Madison, Missoula, Powell, Sanders, Silver Bow, Sweet Grass.

*Celastrina* Tutt, 1906

- 106 *argiolus pseudargiolus* (Boisduval & LeConte)—Big Horn, Carbon, Chouteau,

Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Lake, Lewis & Clark, Mineral, Missoula, Ravalli, Sanders, Sweet Grass.

## Nymphalidae

### *Limenitis* Fabricius, 1807

- 107 *arthemis rubrofasciata* (Barnes & McDunnough)—Flathead, Glacier.
- 108 *archippus archippus* (Cramer)—Carbon, Chouteau, Custer, Gallatin, Granite, Lake, Madison, Missoula, Park, Powell, Ravalli, Sweet Grass, Yellowstone.
- 109a *weidemeyerii latifascia* Perkins & Perkins—Beaverhead, Carbon, Cascade, Chouteau, Fergus, Flathead, Gallatin, Granite, Lewis & Clark, Madison, Mineral, Powell, Ravalli, Silver Bow, Stillwater, Sweet Grass.
- 109b *weidemeyerii oberfoelli* Brown—Custer, Dawson, Prairie.
- 110 *lorquini burrisonii* Maynard—Beaverhead, Flathead, Glacier, Granite, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, Sanders.

### *Vanessa* Fabricius, 1807

- 111 *atalanta rubria* (Fruhstorfer)—Beaverhead, Carbon, Cascade, Chouteau, Dawson, Fergus, Flathead, Gallatin, Golden Valley, Judith Basin, Lake, Lewis & Clark, Liberty, Lincoln, Madison, Missoula, Powell, Sanders, Sweet Grass.
- 112 *virginiensis* (Drury)—Carbon.
- 113 *cardui* (Linnaeus)—Beaverhead, Broadwater, Carbon, Cascade, Chouteau, Custer, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Musselshell, Powell, Ravalli, Rosebud, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton.
- 114 *annabella* (Field)—Beaverhead, Carbon, Cascade, Custer, Flathead, Gallatin, Granite, Lake, Madison, Missoula, Ravalli, Sanders.

### *Nymphalis* Kluk, 1802

- 115 *vau-album watsoni* (Hall)—Carbon, Custer, Flathead, Gallatin, Glacier, Lake, Mineral, Missoula, Ravalli, Sanders, Sweet Grass.
- 116 *californica herri* Field—Carbon, Custer, Flathead, Gallatin, Granite, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Powell, Ravalli, Sanders.
- 117 *milberti furcillata* (Say)—Beaverhead, Big Horn, Blaine, Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Musselshell, Park, Powell, Prairie, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass.
- 118 *antiopa antiopa* (Linnaeus)—Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Glacier, Granite, Hill, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Missoula, Musselshell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass.

### *Polygonia* Hübner, 1816

- 119 *satyrus satyrus* (W. H. Edwards)—Beaverhead, Carbon, Cascade, Chouteau, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Missoula, Park, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass.
- 120 *faunus rusticus* (W. H. Edwards)—Carbon, Cascade, Fergus, Flathead, Gallatin, Glacier, Granite, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass.
- 121 *zephyrus* (W. H. Edwards)—Beaverhead, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Glacier, Granite, Judith Basin, Lake, Lewis & Clark, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Silver Bow, Stillwater, Sweet Grass.

- 122 *oreas silenus* (W. H. Edwards)—Carbon, Cascade, Flathead, Lake, Missoula, Park, Sanders, Sweet Grass. The Carbon, Park and Sweet Grass County records may be doubtful. I have not seen the specimens.
- 123 *progne* (Cramer)—Carbon. This also may be a doubtful record, but is retained for the present, until the specimen can be examined.

*Charidryas* Scudder, 1872

- 124 *nycteis drusius* (W. H. Edwards)—Carbon.
- 125 *gorgone carlotta* (Reakirt)—Cascade, Custer, Dawson, Fallon, Fergus, Gallatin, Phillips, Prairie, Richland, Rosebud, Stillwater, Wibaux, Yellowstone.
- 126 *acastus acastus* (W. H. Edwards)—Cascade, Custer, Dawson, Fallon, Flathead, Gallatin, Lewis & Clark, Prairie.
- 127 *damoetas damoetas* (Skinner)—Carbon, Flathead, Glacier.
- 128 *palla calydon* (Holland)—Broadwater, Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Glacier, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Powell, Ravalli, Sanders, Stillwater, Sweet Grass. Some Montana material is near *sterope* (W. H. Edwards).

*Phyciodes* Hübner, 1816

- 129 *tharos* ssp.—Beaverhead, Blaine, Broadwater, Carbon, Chouteau, Custer, Dawson, Fergus, Flathead, Gallatin, Glacier, Granite, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Musselshell, Powell, Prairie, Ravalli, Rosebud, Sanders, Stillwater, Sweet Grass.
- 130 *campestris campestris* (Behr)—Beaverhead, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Rosebud, Sanders, Stillwater, Sweet Grass, Yellowstone. There may be blending with *camillus* (W. H. Edwards) in the southwestern part of the state.
- 131 *mylitta mylitta* (W. H. Edwards)—Beaverhead, Big Horn, Blaine, Chouteau, Flathead, Gallatin, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Missoula, Powell, Ravalli, Sanders, Silver Bow, Sweet Grass.
- 132 *pallida barnesi* Skinner—Chouteau, Gallatin, Madison, Ravalli, Sweet Grass.

*Hypodryas* Higgins, 1978

- 133 *gillettii* (Barnes)—Beaverhead, Cascade, Fergus, Glacier, Golden Valley, Judith Basin, Madison, Mineral, Missoula, Sanders. Higgins (1978) has revised the genus *Euphydryas* Scudder, and erected two new genera for the North American species. He retained only *phaeton* (Drury), which does not occur in Montana, in the genus *Euphydryas*. His arrangement is followed here, though some may prefer to consider his new names as subgeneric, rather than generic.

*Occidryas* Higgins, 1978

- 134 *colon wallacensis* (Gunder)—Beaverhead, Flathead, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, Sanders.
- 135a *anicia anicia* (Doubleday)—Flathead, Glacier, Lake, Lincoln, Mineral, Sanders.
- 135b *anicia howlandi* (Stallings & Turner)—Beaverhead, Gallatin, Jefferson, Lewis & Clark, Madison, Missoula, Ravalli.
- 135c *anicia bernadetta* (Leussler)—Big Horn, Carbon, Cascade, Chouteau, Custer, Fergus, Meagher, Rosebud, Stillwater, Sweet Grass.
- 136a *editha hutchinsi* (McDunnough)—Beaverhead, Broadwater, Carbon, Cascade, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sweet Grass. Form "montanus" (McDunnough) occurs in the high mountains of the Beartooth Plateau in Carbon and Park counties.
- 136b *editha* nr. *beani* (Skinner)—Flathead.



*Boloria* Moore, 1900

- 137a *selene tollandensis* (Barnes & Benjamin)—Beaverhead.
- 137b *selene atrocostalis/tollandensis*—Beaverhead, Carbon, Cascade, Chouteau, Custer, Dawson, Fergus, Flathead, Gallatin, Granite, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Missoula, Park, Powell, Ravalli, Silver Bow, Sweet Grass. Almost all of Montana, with the exception of a small portion of Beaverhead Co., falls within a broad blend zone of *atrocostalis* (Huard) and *tollandensis* (Kohler, 1977). Material from Custer and Dawson counties may prove to be *sabulocollis* Kohler, but I have not been able to examine the specimens.
- 138 *bellona* nr. *jenistai* Stallings & Turner—Fergus, Flathead, Lake, Lewis & Clark, Missoula. Montana representatives of *bellona* are in need of further study.
- 139 *kriemhild* (Strecker)—Carbon, Gallatin, Sweet Grass.
- 140 *epithore borealis* Perkins—Beaverhead, Flathead, Glacier, Granite, Hill, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, Sanders, Silver Bow.
- 141 *freija browni* Higgins—Carbon.
- 142 *alberta* (W. H. Edwards)—Flathead, Glacier.
- 143 *astarte astarte* (Doubleday)—Flathead, Glacier.
- 144 *titania* ssp.—Carbon, Cascade, Flathead, Gallatin, Judith Basin, Madison, Meagher, Missoula, Park, Stillwater, Sweet Grass. The name *ingens* (Barnes & McDunnough) has been applied to Montana *titania*, but specimens do not compare well with Wyoming material. Possibly two unnamed subspecies of *titania* are present in Montana. The species is currently under study by Lee D. Miller.
- 145 *eunomia ursadentis* Ferris & Groothuis—Carbon, Stillwater.

*Speyeria* Scudder, 1872

- 146 *idalia* (Drury)—Custer. So far, only a single specimen has been taken, a female at Miles City by Wiley in 1893.
- 147 *edwardsii* (Reakirt)—Blaine, Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Judith Basin, Lewis & Clark, Madison, Meagher, Missoula, Musselshell, Park, Powder River, Powell, Rosebud, Sanders, Stillwater, Sweet Grass, Valley.
- 148 *coronis* ssp.—Beaverhead, Carbon, Cascade, Chouteau, Custer, Deer Lodge, Fergus, Golden Valley, Jefferson, Lewis & Clark, Madison, Meagher, Musselshell, Powder River, Powell, Stillwater, Sweet Grass, Yellowstone. The name *halcyone* (W. H. Edwards) has usually been applied to Montana *coronis*, but Grey (1979) feels they would be better referred to as *snyderi* (Skinner). Most Montana *coronis* are greenish in the ventral hind wing discal area as in *snyderi*, rather than brownish like *halcyone*.
- 149 *zerene garretti* (Gunder)—Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Cascade, Chouteau, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Musselshell, Park, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass, Wheatland.
- 150a *callippe gallatini* (McDunnough)—Beaverhead, Broadwater, Carbon, Cascade, Gallatin, Jefferson, Lewis & Clark, Madison, Meagher, Missoula, Park, Powell, Ravalli, Silver Bow, Stillwater, Sweet Grass.
- 150b *callippe calgariana* (McDunnough)—Blaine, Chouteau, Custer, Dawson, Fergus, Flathead, Glacier, Golden Valley, Lake, Liberty, Sanders, Teton, Valley. There is considerable blending of *gallatini* and *calgariana* characters over much of the state.
- 151a *egleis macdunnoughi* (Gunder)—Beaverhead, Gallatin, Park, Stillwater.
- 151b *egleis albrighti* (Gunder)—Carbon, Cascade, Chouteau, Fergus, Golden Valley, Lewis & Clark, Meagher, Sweet Grass.

- 151c *egleis* ssp.—Flathead, Glacier, Granite, Lake, Missoula, Powell, Ravalli.
- 152 *atlantis* ssp.—Beaverhead, Big Horn, Blaine, Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Glacier, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Stillwater, Sweet Grass, Toole. There is considerable variation in *atlantis* across the state. The name *hutchinsi* (Gunder) is conventionally applied to most material, but specimens approaching *beani* (Barnes & Benjamin) and *helenae* dos Passos & Grey are often found in the variation (Grey, 1979).
- 153 *hydaspe sakuntala* (Skinner)—Beaverhead, Carbon, Cascade, Chouteau, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Stillwater, Sweet Grass, Toole.
- 154 *mormonia eurynome* (W. H. Edwards)—Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Cascade, Chouteau, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis & Clark, Madison, Meagher, Missoula, Park, Powell, Ravalli, Silver Bow, Stillwater, Sweet Grass, Teton, Wheatland.
- 155 *cybele leto* (Behr)—Beaverhead, Big Horn, Blaine, Carbon, Cascade, Chouteau, Custer, Dawson, Fergus, Flathead, Gallatin, Glacier, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Sweet Grass. Custer and Dawson County material may be closer to nominate *cybele* (Fabricius), but I have not been able to examine specimens.
- 156a *aphrodite manitoba* (Chermock & Chermock)—Big Horn, Custer, Dawson, Musselshell, Rosebud.
- 156b *aphrodite columbia* (H. Edwards)—Flathead, Lake, Lincoln, Missoula.
- 156c *aphrodite ethne* (Hemming)—Beaverhead, Blaine, Carbon, Cascade, Chouteau, Fergus, Gallatin, Golden Valley, Hill, Jefferson, Madison, Meagher, Park, Stillwater, Sweet Grass, Treasure. There is considerable intergrading of characters of the different subspecies of *aphrodite* in several areas.

*Euptoieta* Doubleday, 1848

- 157 *claudia* (Cramer)—Blaine, Carbon, Custer, Dawson, Fergus, Gallatin, Golden Valley, Hill, Madison, Prairie, Richland, Rosebud, Stillwater, Sweet Grass, Yellowstone.

Danaidae

*Danaus* Kluk, 1802

- 158 *plexippus plexippus* (Linnaeus)—Carbon, Cascade, Custer, Gallatin, Jefferson, Lake, Lewis & Clark, Madison, Missoula, Musselshell, Sanders, Sweet Grass.

Satyridae

*Coenonympha* Hübner, 1816

- 159a *ampelos ampelos* W. H. Edwards—Cascade, Flathead, Granite, Lake, Lincoln, Mineral, Missoula, Ravalli, Sanders.
- 159b *ampelos sweadneri* Chermock & Chermock—Mineral, Missoula.
- 160 *ochracea ochracea* W. H. Edwards—Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Granite, Jefferson, Lewis & Clark, Madison, Missoula, Park, Powell, Rosebud, Silver Bow, Stillwater, Sweet Grass, Yellowstone.
- 161 *inornata benjamini* McDunnough—Beaverhead, Blaine, Carbon, Cascade, Chouteau, Custer, Dawson, Fallon, Flathead, Gallatin, Glacier, Granite, Lake,



Lewis & Clark, Madison, Missoula, Pondera, Roosevelt, Rosebud, Stillwater, Toole, Wibaux, Yellowstone.

- 162 *haydenii* (W. H. Edwards)—Broadwater, Carbon, Cascade, Gallatin, Jefferson, Judith Basin, Lewis & Clark, Madison, Meagher, Park, Powell, Sweet Grass.

*Neominois* Scudder, 1875

- 163 *ridingsii ridingsii* (W. H. Edwards)—Beaverhead, Blaine, Broadwater, Carbon, Chouteau, Dawson, Fergus, Gallatin, Jefferson, Lewis & Clark, Madison, Park, Sweet Grass.

*Cercyonis* Scudder, 1875

- 164 *pegala ino* (Hall)—Beaverhead, Big Horn, Blaine, Carbon, Cascade, Chouteau, Custer, Dawson, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Hill, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Musselshell, Park, Phillips, Powder River, Powell, Prairie, Ravalli, Sanders, Stillwater, Sweet Grass, Yellowstone.
- 165 *meadii meadii* (W. H. Edwards)—Carbon, Custer, Dawson, Musselshell, Yellowstone.
- 166 *sthenele paulus* (W. H. Edwards)—Beaverhead, Carbon, Mineral. This species is included on the basis of records from James A. Scott and C. J. Durden. I have not seen the specimens.
- 167 *oetus charon* (W. H. Edwards)—Beaverhead, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Dawson, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powder River, Powell, Prairie, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass, Valley. Included here are records which reported *phocus* (W. H. Edwards).

*Oeneis* Hübner, 1816

- 168 *uhleri varuna* (W. H. Edwards)—Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Dawson, Fallon, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Lewis & Clark, Meagher, Missoula, Musselshell, Powell, Sweet Grass, Wibaux, Yellowstone.
- 169 *chryxus chryxus* (Doubleday)—Beaverhead, Carbon, Cascade, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Granite, Judith Basin, Lake, Lewis & Clark, Lincoln, Madison, Meagher, Missoula, Park, Powell, Ravalli, Sanders, Silver Bow, Sweet Grass.
- 170 *alberta alberta* Elwes—Fergus, Glacier, Golden Valley, Hill, Judith Basin.
- 171 *taygete edwardsi* dos Passos—Carbon, Stillwater.
- 172 *jutta reducta* McDunnough—Beaverhead, Cascade, Jefferson, Judith Basin, Lewis & Clark, Meagher, Missoula, Powell. The more northern Montana representatives of *jutta* are placed as *reducta* for the present, but specimens require further study.
- 173 *melissa beanii* Elwes—Carbon, Glacier, Stillwater.

*Erebia* Dalman, 1816

- 174 *magdalena magdalena* Strecker—Carbon.
- 175 *theano ethela* W. H. Edwards—Carbon, Park, Stillwater.
- 176a *epipsodea epipsodea* Butler—Beaverhead, Broadwater, Carbon, Deer Lodge, Flathead, Gallatin, Glacier, Granite, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass.
- 176b *epipsodea freemani* Ehrlich—Cascade, Chouteau, Fergus, Judith Basin, Meagher.
- 177 *callias callias* W. H. Edwards—Carbon.

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